REMARKS

I. CLAIM OBJECTION AND CLAIM CHANGES

Claims 15 and 16 were objected to for omitting the word "force" in line 2 of step b of both claims.

The Office Action of August 2, 2007 responds to the amendment of June 14, 2007, which was efiled and an acknowledgement receipt with confirmation number 5902 was returned to the undersigned.

On the copy of the simultaneous amendment that was attached to the acknowledgement receipt the word "force" was indeed omitted from step b, line 2, of claim 15, but was not omitted from step b, line 2, of claim 16. Public Pair confirms that the situation is the same in USPTO file containing the amendment of June 14, 2007.

Consequently only claim 15, step b, has been indicated as amended above in accordance with Rule 121.

For the foregoing reasons and because of the change in claim 15, withdrawal of the objection to the wording of claims 15 and 16 is respectfully requested.

II. REJECTION OF CLAIMS FOR FAILING TO COMPLY WITH THE WRITTEN DESCRIPTION REQUIREMENT

Claims 16 to 20 were rejected under 35 U.S.C. 112, first paragraph, for failing to comply with the written description requirement.

According to page 2 of the Office Action the wording of claim 16 that states that the thickness of the glass sheet is continuously measured during fissure formation is not supported by the specification. Claims that depend on claim 16 would inherit the deficiencies of claim 16.

Independent claim 15 claims embodiments of the method in which the thickness profile across the glass sheet (i.e. glass sheet thickness as a function of position across the sheet from one side to the other) is measured prior to fissure formation. Independent claim 16 claims embodiments of the method in which the thickness of the glass sheet is measured continuously during fissure formation (step c of claim 16).

The wording of claim 16, step c, is fully supported by the wording on page 6, lines 4 to 8, and on page 8, lines 26 to 28. At the latter location the applicants' originally filed specification states:

> "A method is also feasible, however, with which the glass thickness is detected continuously during cross cutting and the cutting force is automatically adjusted as a function thereof."

Thus the wording of step c, claim 16, is fully supported by the specification at the aforesaid locations. The applicants' specification teaches embodiments in which the cutting force used for fissure formation is automatically adjusted during the motion of the cutting tool across the glass sheet according to the measured thickness of the glass sheet at the position of the cutting tool. The specification also teaches embodiments claimed in claim 15 in which the thickness profile across the glass sheet is first measured and then cutting force is adjusted according to the initial thickness measurement at the various positions across the

glass sheet.

Also claims 15 and 16 have been amended to make the wording of steps c and d clearer. The measuring of the thickness is designed to determine thickness variations of the glass sheet occurring in a transverse direction across the glass sheet. E.g. see lines 23 to 30 of page 5 of applicants' specification.

With regard to dependent claims 17 to 20, applicants note that claims 17 to 20 do not depend on claim 16, but instead depend on claim 15. No reason was given for rejecting the wording of claims 17 to 20. The wording of claim 17 is fully supported by the disclosure at page 5, lines 27 to 30. The wording of claims 18 and 19 is fully supported by the disclosure at page 5, lines 21 to 25; page 18, lines 21 to 24; and page 9, line 2. The wording of claim 20 (and also claim 18) is fully supported by the disclosure e.g. at page 9, lines 9 to 12.

The wording of new claim 21 (with respect to "automatically") is fully supported by the quoted wording above at page 8, lines 26 to 28, of applicants' originally filed specification.

For the foregoing reasons withdrawal of the rejection of claims 16 to 20 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is respectfully requested.

In addition, it is respectfully submitted that new claim 21 should not be rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

III. ANTICIPATION REJECTION

Claims 15 to 17 and 20 were rejected as anticipated under 35 U.S.C. 102 (b) by Bier, et al (US '104).

According to page 3 of the Office Action (but we do not agree), Bier, et al, discloses a method of measuring the thickness profile across the glass sheet during cross cutting or prior to cross cutting and then adjusting the cutting force according to the thickness profile. The location of the teaching is supposedly at column 1, lines 40 to 50, according to the Office Action.

However column 1, lines 40 to 55, only describes a *possible* method of cross cutting a glass sheet in which the level of the glass sheet surface is detected as a function of position on the glass sheet by means of a reference wheel that rides on the surface and is spaced from the cutting wheel. However US '104 concludes that this particular *proposed* method of controlling the cutting wheel would be *impossible* (column 1, lines 49 to 51), because there are no means that are sufficient fast-acting to handle the "variation in the spacing between such reference wheel and the cutter wheel". Thus US '104 does **not** disclose a practical method of detecting surface level or thickness variations across the glass sheet during cross cutting in column 1, which has been actually implemented in the prior art related to their invention. They clearly indicate that the method described in column 1 is not possible.

Bier, et al, discloses and claims an apparatus for cutting glass sheets, which could conceivably be used in a variety of methods to produce a variety of

different products. However disclosure of an apparatus and its parts does not constitute disclosure of any particular method, other than a general method of operation.

The methods of cutting glass sheets disclosed by Bier, et al, are the methods claimed in claim 8 of US '104 and the methods according to dependent claim 9, which are described in some detail in column 3 and shown in fig. 4. Also some disclosure of methods occurs in column 4 of US '104.

Method claim 8 claims a *general* method of producing a fissure on a glass sheet of a predetermined depth (fixed depth) between predetermined locations on the glass sheet, which utilizes the constant reluctant motor of their cutting apparatus that forms the fissure, so that claim 8 basically claims a method of operating the apparatus of claim 1. This claimed method would be generic to the method claimed in claim 15 or 16, if it were not limited to the use of the constant reluctance motor of US '104.

Furthermore it should be readily appreciated that a broad generic disclosure of a method never anticipates a more specific disclosure of a species of the method that includes further limitations that distinguish from the generic disclosure.

Dependent method claim 9 claims cutting a piece out of a glass sheet by forming a score line along a closed loop on the glass sheet. As explained in column 3, lines 21 to 55, especially column 3, lines 32 to 33, this sort of cutting method is used to make a glass blank for a windshield of a vehicle, a sidelight cover glass or a backlight cover glass of a vehicle. Also the reference clearly

teaches that the pressure at the corners of the blank for the windshield shown in fig. 4 is clearly increased to produce a deeper fissure or score at the corners in column 3. According to claim 9 the resulting fissure is deeper at the corners than along the length and width of the windshield blank, because of increased pressure applied at the corners.

Also US '104 claims that their method is especially suitable for cutting a large sheet of glass into segments in column 4, lines 4 to 16. However US '104 does **not** disclose a method of cutting a moving or continuous glass sheet into a plurality of pieces, which includes the limitations of step a) of claim 15 or 16. US '104 does not disclose step a) of claims 15 and 16, namely moving a cutting tool **at an angle to a travel direction** of a continuously produced glass sheet **across the width of the glass sheet**. The angle of the cutting tool motion across the sheet must be controlled to compensate for the motion in the travel direction so that the fissure is generally perpendicular to the longitudinal edge of the moving glass sheet to produce a rectangular piece. This limitation is absent from the disclosures of US '104.

The arrangement necessary to continuously cut off pieces from a moving glass sheet has different problems than are encountered when cutting a piece out of a stationary glass sheet as described in Bier, et al. The glass sheet cut in column 3, of Bier, et al, must be stationary in order to produce the exemplary articles described in column 3, because the score line or fissure in the glass sheet must follow a curve that corresponds to the outer peripheral edge of e.g. a windshield that is to be made from the resulting glass blank.

Furthermore the cutting apparatus of Bier, et al, has absolutely no means for measuring the thickness of the glass. The use of the constant-reluctance motor is precisely for the purpose of avoiding measuring the thickness of the glass, because the use of that constant-reluctance motor produces score lines or fissures of a predetermined depth regardless of the thickness of the glass (column 2, lines 5 to 15) in response to an input signal of a given magnitude. Second during the method *implicitly* disclosed in Bier, et al, the cutting force is not adjusted according to a thickness measured as part of the claimed method of cross cutting, but instead is maintained constant so that the fissure formed in the glass is of a constant predetermined depth, as long as the input signal is constant. The input signal is a D.C. potential supplied to the motor (column 2, lines 10 to 14; column 3, lines 34 to 36).

Although Bier, et al, could have disclosed or suggested an embodiment in which the input signal that controls the depth of the score line is varied so that the depth of the score line or fissure varies according to the thickness of the glass sheet, US '104 never discloses or suggests that embodiment. The reason is probably that the reference is most concerned with cutting particular blanks of a predetermined shape out of a stationary glass sheet instead of cutting rectangular pieces from a moving glass sheet.

Thus US '104 never discloses or suggests that the score line or fissure should be of a depth that varies along its length according to the thickness of the glass sheet.

In addition, one should not confuse *knowledge* of the thickness of the glass sheet with *measuring* the thickness of the glass sheet. A manufacturer will have general knowledge of the thickness of a glass sheet (e.g. stating that the glass is ¼ inch glass sheet) and can market the glass sheet as such. The fissure or score line depth will only be a fraction of the expected thickness of the sheet.

Furthermore simply because the Bier, et al, US Patent does mention thickness or that it is known that there are small variations in thickness, does not mean that they *measure* thickness during their cutting procedure or immediately prior to it as a first step of their method of cutting the glass sheet. In fact, Bier, et al, mentions no tools or methods for measuring thickness of the glass sheet. In contrast, the applicants disclose measuring the thickness of the glass sheet during their cutting procedure as part of their method for cutting the glass sheet with thickness sensors (page 6, line 4, of applicants' specification).

It is well established that each and every limitation of a claimed invention must be disclosed in a single prior art reference in order to be able to reject the claimed invention under 35 U.S.C. 102 (b) based on the disclosures in the single prior art reference. See M.P.E.P. 2131 and also the opinion in ***In re Bond***, 15 U.S.P.Q. 2nd 1566 (Fed. Cir. 1990).

The following limitations of the applicants' claimed cutting method are **not** disclosed in Bier, et al:

(1) cutting a continuous moving glass sheet at an angle to its travel direction and across the glass sheet (step a of claim 15 or 16);

(2) a method of cutting that includes measuring a thickness of the glass

sheet (Bier, et al, do not disclose any sensors or other means for measuring thickness during cutting -- how could they disclose a cutting method including thickness measurement?); and

(3) varying the cutting force applied by the cutting tool at a number of positions across the glass sheet according to a measured thickness at those positions (Even if you assume that Bier, et al, were in possession of thickness profile measurements from the manufacturer, their disclosure does not include a single embodiment of a cutting method in which cutting force is varied according to thickness of the glass sheet).

For the foregoing reasons withdrawal of the rejection of amended claims 15 to 17 and 20 as anticipated under 35 U.S.C. 102 (b) by Bier, et al, is respectfully requested.

Furthermore it is respectfully submitted that new claim 21 should not be rejected as anticipated under 35 U.S.C. 102 (b) by Bier, et al.

IV. OBVIOUSNESS REJECTION

Claims 15 to 20 were rejected as obvious under 35 U.S.C. 103 (a) over Almar, et al, (EP '042), in view of Bier, et al (US '104).

EP '042 (Almar, et al) discloses a glass-cutting machine for automatically cutting a glass sheet or a laminated glass sheet 2 (Page 2, column 1, lines 4 to 6). The cutting apparatus includes a cutting or scoring means for making a cut or score, pressure applying means acting on the cutting line or score line to break

the sheet into two portions and separating means to separate the two portions (column 2, lines 4 to 15). The various mechanical means to break the sheet into two positions are controlled by control and operating means including hydraulic valve means for controlling the cutting or scoring and pressure applying means, which in turn are controlled by an electronic controller 57(column 2, lines 15 to 22; fig. 4; claim 1). The electronic controller 57 receives signals from a temperature-measuring sensor 64 and **a thickness-measuring sensor 62** continuously during the cutting process (column 4, line 52, to column 5, line 10; and column 6, lines 34 to 43).

Also EP '042 teaches that the methods of operating their apparatus include a partly manual method and a fully automatic method (column 6, lines 16 to 44), in which the sensor (camera) 62 can measure the thickness of the glass sheet 2. Also see column 1, lines 24 to 47, for a discussion of the prior art.

The Office Action admits on page 4 in paragraph 8 that Almar, et al, do not disclose or suggest the features of step d) of claim 15 or 16, namely the step of varying the cutting force according to variations in the thickness of an irregular glass sheet. However the Office Action continues with the opinion that Bier, et al, teaches or suggests applying a cutting force to the glass sheet that varies in accordance with its thickness variations.

As argued in the above section, Bier, et al, do describe an apparatus that could perform the cutting method according to claim 15 or 16 but without the step of measuring the thickness of the glass sheet or any of a number of patentably distinguishable cutting methods. However merely because a disclosed apparatus

could perform a particular cutting method does not mean that the reference discloses or suggests that cutting method. In fact, Bier, et al, do not disclose or suggest varying the cutting force applied by the cutting tool at a number of positions across the glass sheet according to a measured thickness at those positions, i.e. US '104 does not suggest step d of claim 15 or 16.

According to many US judicial opinions there must be some hint or suggestion in the prior art of the modifications of the disclosures in a prior art reference or references necessary to arrive at a claimed invention for a valid obviousness rejection of the claimed invention under 35 U.S.C. 103 (a). See M.P.E.P. 2141 and following. For example, the Court of Appeals for the Federal Circuit has said:

> "The mere fact that the prior art **may** [emphasis ours] be modified in the manner suggested by the Examiner does not make the modification obvious, unless the prior art suggested the desirability of the modification... It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated that "one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." ***In re Fritch***, 23 U.S.P.Q. 2nd 1780, 1783-84 (Fed. Cir. 1992).

Withdrawal of the rejection of claims 15 to 20 as obvious under 35 U.S.C. 103 (a) over Almar, et al, in view of Bier, et al (US '104) is respectfully requested.

Furthermore it is respectfully submitted that new claim 21 should not be rejected as obvious under 35 U.S.C. 103 (a) over Almar, et al, in view of Bier, et

al (US '104).

Should the Examiner require or consider it advisable that the specification, claims and/or drawing be further amended or corrected in formal respects to put this case in condition for final allowance, then it is requested that such amendments or corrections be carried out by Examiner's Amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing the case to allowance, he or she is invited to telephone the undersigned at 1-631-549-4700.

In view of the foregoing, favorable allowance is respectfully solicited.

Respectfully submitted,

Michael J. Striker,
Attorney for the Applicants
Reg. No. 27,233